PROJECT FACT SHEET

CONTRACT TITLE: Zone Isolation for Horizontal Wells Using Expanded Metal Packer Assemblies (PARTNERSHIP)

DATE REVIEWED: 08/04/1994 **DATE REVISED:** 08/04/1994

OBJECTIVE: To demonstrate the feasibility of installing expanded metal packers in tandem to provide permanent zone isolation in horizontal wells.

ID NUMBER: P-15

B & R CODE: AC0530000

CONTRACTOR: Los Alamos National Lab
& Exxon Production Rsrch
ADDR: P.O. Box 1663
ES-DO/MS D4462
Los Alamos, NM 87545

CONTRACT PERFORMANCE PERIOD:
06/01/1992 to 06/30/1994
PROGRAM: Supporting Research
RESEARCH AREA: Production

CONTRACT PROJECT MANAGER:

NAME: Dr. Robert J. Hanold
ADDR: Los Alamos National Lab
ES-DO/MS D4462
Los Alamos, NM 87545
PHONE: (505) 667-1698
FAX: (505) 667-3494

DOE PROGRAM MANAGER:
NAME: Dr. Arthur Hartstein
COMMERCIAL: (301) 903-2760

DOE PROJECT MANAGER:
NAME: Rhonda P. Lindsey
LOCATION: BPO
COMMERCIAL: (918) 337-4407

PROJECT SITE:
Los Alamos, NM

SCHEDULED MILESTONES:

Complete working agreements.	07/93
Prototype packer design.	08/93
Surface testing.	09/93
Full size packer design.	07/94
Surface testing.	12/94
Downhole testing.	03/95

FUNDING (1000'S)	DOE	OTHER	CONTRACTOR	TOTAL
PRIOR FISCAL YRS	350	0	0	350
FISCAL YR 1994	0	0	0	0
FUTURE FUNDS	0	0	0	0
TOTAL EST'D FUNDS	350	0	0	350

PROJECT DESCRIPTION: Los Alamos will develop expanded metal packers to be used for zone isolation in horizontal well completions. Working in collaboration with Oryx Energy Company, a detailed project plan and an outline of responsibilities will guide the development of the packer for installation in Oryx operated wells. A prototype packer performance specification has been prepared to support zone isolation in one of several fields where Oryx expects to continue drilling horizontal wells. Both parties determined that there is a need for an oil field service company to join the project. Otis Engineering Company has expressed interest in the concept and a RFP for R&D contract with Otis is in preparation. The service company will provide fabrication expertise and facilities, test facilities, and experience with completion systems. Oryx has curtailed development drilling in the U.S. and their role in the project has recently diminished. Mobil has expressed interest in a revised project. Los Alamos will provide technical guidance in the design, fabrication, testing, and evaluation of the packers.

PRESENT STATUS: Initiated in June 1992.
Funding received Sept. 1992.

ACCOMPLISHMENTS: A conceptual packer design has been completed and reviewed by all parties. A statement-of-work for the R&D contract with Otis has been revised and award of a contract was pending when Otis was merged into Halliburton Energy Services in June 1993. The R&D contract was cancelled. Attempts to revise and award a contract with Halliburton Energy Services failed to develop sufficient Oil Company interest and Halliburton decided to withdraw from the project in May 1994. Los Alamos does not plan to request any additional funding.

Los Alamos National Laboratory is the inventor of the expanded metal packer concept and the Laboratory has conducted and evaluated tests of individual packers and presented a paper on the results at the 1991 Annual Meeting of the Society of Petroleum Engineers.

BACKGROUND: The recent increase in the use of horizontal wells in the oil and gas industry has created a need for new methods of completing the open hole horizontal wells. Expanded metal packers have been proposed as an alternative to open hole packers and cemented liners. Experiments with metal packers in 1988-1991 showed that the metal packers have the potential to provide reliable zone isolation for stimulation and production.

Tasks. (1) Define operating environment and performance (completed);
(2) Design, fabricate, test, and evaluate 1/3 size and full size prototype packers in surface test facilities;
(3) Select candidate fields and wells for downhole testing;
(4) Design final completion assemblies and develop installation, test, and evaluation procedures.